IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Singh

Applicant(s): Monga

Application No.: 09/930095 Group Art Unit: 2613

Filed: 08/15/2001

Title: System, Device and Method for Managing Connection Quality in an Optical Communication

System

Attorney Docket No.: 120-177 Client No. 14985BAUS01U

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In reply to the Final Office Action of March 10, 2008, and in accordance with the notice of appeal filed with this request, please consider the remarks below.

REMARKS

Claims 1-27 are pending in this application. All of the pending claims are rejected under 35 U.S.C. 103(a) based on U.S. Pub. No. 2002/0156914 (Lo) in view of U.S. Patent No. 5,351,146 (Chan). Prior to this paper, Applicant successfully overcame a 35 U.S.C. 102 rejection of the independent claims based on Lo by pointing out that Lo fails to teach the limitation that services required by a user application are determined and provisioned. The Examiner now cites Chan at column 5, lines 12-18; column 6, lines 45-49; column 7, lines 49-58; and column 11, lines 8-61, as teaching the recited limitation that Lo fails to disclose. However, as will be discussed below in greater detail, Chan represents an example of the problem that the presently claimed invention helps to overcome rather than the solution.

As described in the Background of this application, an optical communication network is capable of providing various communication services to its users.¹ However, one problem with optical communications networks is that some services are expensive and need to be planned and scheduled well in advance because changes to the optical communication network, such as provisioning and switching optical communication paths, require substantial human intervention.² Contrast that description of the problem with the description of the problem in Chan:

While it is difficult to accurately predict the future, it is important that the all-optical transmission system be capable of operating with the applications that future network users may desire to use. To this end, while there are undoubtedly many applications that

¹ Specification at page 2, lines 31-32.

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² Id. at page 2, line 32 through page 3, line 2.

will be created, some of the various applications that are likely to be used can be classified into three categories.³ (emphasis added)

Chan describes the first category of applications that are likely to be used as having "anticipated data rates [that] span the range from Kbps to Gbps."⁴ The second category is analog services.⁵ The third category, described in a passage cited by the examiner, is user applications that require an optical interface. The other passages cited by the examiner describe some of the features that potential future applications might use. For example, the passage at column 6, lines 45-49 describes transmission of a "light tree," and the passage at column 7, lines 49-58 suggests that other types of services such as ATM might be offered on top of the all optical network, and the passage at column 11, lines 8-61 describes scheduler agents that allocate paths to users. Clearly, Chan teaches estimating what services future applications might require, as opposed to what services are actually required at any given time. The limitation recited in the claims is determining and provisioning a set of application-specific optical network communication services for the user application based at least in-part upon the ascertained communication requirements and non-requirements of the user application. In other words, Chan guesses what a non-existent application might require at some time in the distant future, and the claimed invention determines what an existing application actually requires in the near term.

There are appreciable practical implications that result from the distinction described above. According to the cited combination of references, network engineers estimate what future applications might require and design the network accordingly. Note that if the estimate is

³ Chan at column 4, lines 49-55

⁴ Chan at column 4, lines 57-58.

⁵ Chan at column 5, lines 6-11.

⁶ Chan at column 5, lines 12-18.

incorrect, substantial human intervention may be required to change the network. For example, if an enterprise estimates the requirements of its applications and subscribes to a carrier's services accordingly, an underestimate would require the enterprise to manually, i.e., person-toperson, request that the carrier deploy additional service capability. Further, deployment of that service capability could require human intervention. In contrast, the presently claimed invention would help enable the carrier network to automatically determine the actual requirements of an enterprise application and provision the required services, thereby mitigating the requirement for human intervention. The claimed invention can also help the enterprise more efficiently purchase services. The cited combination of Lo and Chan would yield an estimate of required services that could be purchased from the carrier, i.e., nailed-up, 24-7 services. However, if the services are required less frequently than 24-7, the enterprise is purchasing unused services. The presently claimed invention improves efficiency because the carrier network can determine and provision application service requirements when they are needed. For example, an enterprise application could signal to the carrier network that particular service requirements are needed for a period of 30 minutes on a particular date and time, or once per week. This is advantageous because the enterprise would prefer to pay for 30 minutes per week of some costly service as opposed to paying for the service to be constantly available. Further, even though it might not be possible to predict when and what services are required, the claimed invention enhances efficiency because the requirements of the application can be signaled when they are known.

For the reasons stated above, claim 1 distinguishes the cited combination by reciting "determining a set of application-specific optical network communication services for the user application based at least in-part upon the ascertained communication requirements and non-requirements of the user application, the communications services including at least one of

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unshared lightpath, shared lightpath, routed path, latency, error rate, and protection mechanism." Claim 6 distinguishes the cited combination by reciting "network component logic for determining a set of application-specific optical network communication services for the user application based at least in-part upon the communication requirements and non-requirements of the user application, the communications services including at least one of unshared lightpath, shared lightpath, routed path, latency, error rate, and protection mechanism." Claim 12 distinguishes the cited combination by reciting "an optical service agent operable to determine a set of application-specific communication services required by the user application, the communications services including at least one of unshared lightpath, shared lightpath, routed path, latency, error rate, and protection mechanism." Claim 20 distinguishes the cited combination by reciting "a network user application coupled to the optical communication network, wherein the network user application comprises an optical service agent for obtaining application-specific optical communication services from the optical communication network via a user-to-network interface (UNI) sufficient to support operation of the network user application."

Respectfully Submitted,

May 29, 2008 Date /Holmes W. Anderson/ Holmes W. Anderson, Reg. No. 37,272

Attorney/Agent for Applicant(s) McGuinness & Manaras LLP

125 Nagog Park Acton, MA 01720 (978) 264-4001

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